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## SEQUENCE LISTING

&lt;110&gt; Scharenberg, Andrew

&lt;120&gt; CHARACTERIZATION OF THE SOC/CRAC CALCIUM CHANNEL PROTEIN FAMILY

&lt;130&gt; B0662/7026/ERP/KA

&lt;140&gt; US 09/869,486

&lt;141&gt; 1999-12-20

&lt;150&gt; US 60/114,220

&lt;151&gt; 1998-12-30

&lt;150&gt; US 60/120,018

&lt;151&gt; 1999-01-29

&lt;150&gt; US 60/140,415

&lt;151&gt; 1999-06-22

&lt;150&gt; PCT/US99/29996

&lt;151&gt; 1999-12-20

&lt;160&gt; 32

&lt;170&gt; PatentIn version 3.0

&lt;210&gt; 1

&lt;211&gt; 1212

&lt;212&gt; DNA

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<400> 12

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	1040					1045					1050						
Gln	Val	Gln	Glu	His	Thr	Asp	Gln	Ile	Trp	Lys	Phe	Gln	Arg	His			
	1055					1060					1065						
Asp	Leu	Ile	Glu	Glu	Tyr	His	Gly	Arg	Pro	Ala	Ala	Pro	Pro	Pro			
	1070					1075					1080						
Phe	Ile	Leu	Leu	Ser	His	Leu	Gln	Leu	Phe	Ile	Lys	Arg	Val	Val			
	1085					1090					1095						
Leu	Lys	Thr	Pro	Ala	Lys	Arg	His	Lys	Gln	Leu	Lys	Asn	Lys	Leu			
	1100					1105					1110						
Glu	Lys	Asn	Glu	Glu	Ala	Ala	Leu	Leu	Ser	Trp	Glu	Ile	Tyr	Leu			

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1115	1120	1125
Lys Glu Asn Tyr Leu Gln	Asn Arg Gln Phe Gln	Gln Lys Gln Arg
1130	1135	1140
Pro Glu Gln Lys Ile Glu	Asp Ile Ser Asn Lys	Val Asp Ala Met
1145	1150	1155
Val Asp Leu Leu Asp Leu	Asp Pro Leu Lys Arg	Ser Gly Ser Met
1160	1165	1170
Glu Gln Arg Leu Ala Ser	Leu Glu Glu Gln Val	Ala Gln Thr Ala
1175	1180	1185
Arg Ala Leu His Trp Ile	Val Arg Thr Leu Arg	Ala Ser Gly Phe
1190	1195	1200
Ser Ser Glu Ala Asp Val	Pro Thr Leu Ala Ser	Gln Lys Ala Ala
1205	1210	1215
Glu Glu Pro Asp Ala Glu	Pro Gly Gly Arg Lys	Lys Thr Glu Glu
1220	1225	1230
Pro Gly Asp Ser Tyr His	Val Asn Ala Arg His	Leu Leu Tyr Pro
1235	1240	1245
Asn Cys Pro Val Thr Arg	Phe Pro Val Pro Asn	Glu Lys Val Pro
1250	1255	1260
Trp Glu Thr Glu Phe Leu	Ile Tyr Asp Pro Pro	Phe Tyr Thr Ala
1265	1270	1275
Glu Arg Lys Asp Ala Ala	Ala Met Asp Pro Met	Gly Asp Thr Leu
1280	1285	1290
Glu Pro Leu Ser Thr Ile	Gln Tyr Asn Val Val	Asp Gly Leu Arg
1295	1300	1305
Asp Arg Arg Ser Phe His	Gly Pro Tyr Thr Val	Gln Ala Gly Leu
1310	1315	1320
Pro Leu Asn Pro Met Gly	Arg Thr Gly Leu Arg	Gly Arg Gly Ser
1325	1330	1335
Leu Ser Cys Phe Gly Pro	Asn His Thr Leu Tyr	Pro Met Val Thr
1340	1345	1350
Arg Trp Arg Arg Asn Glu	Asp Gly Ala Ile Cys	Arg Lys Ser Ile
1355	1360	1365
Lys Lys Met Leu Glu Val	Leu Val Val Lys Leu	Pro Leu Ser Glu
1370	1375	1380
His Trp Ala Leu Pro Gly	Gly Ser Arg Glu Pro	Gly Glu Met Leu
1385	1390	1395
Pro Arg Lys Leu Lys Arg	Ile Leu Arg Gln Glu	His Trp Pro Ser
1400	1405	1410
Phe Glu Asn Leu Leu Lys	Cys Gly Met Glu Val	Tyr Lys Gly Tyr
1415	1420	1425
Met Asp Asp Pro Arg Asn	Thr Asp Asn Ala Trp	Ile Glu Thr Val
1430	1435	1440
Ala Val Ser Val His Phe	Gln Asp Gln Asn Asp	Val Glu Leu Asn
1445	1450	1455
Arg Leu Asn Ser Asn Leu	His Ala Cys Asp Ser	Gly Ala Ser Ile
1460	1465	1470
Arg Trp Gln Val Val Asp	Arg Arg Ile Pro Leu	Tyr Ala Asn His
1475	1480	1485
Lys Thr Leu Leu Gln Lys	Ala Ala Ala Glu Phe	Gly Ala His Tyr
1490	1495	1500

&lt;210&gt; 13

&lt;211&gt; 1816

&lt;212&gt; PRT

&lt;213&gt; Caenorhabditis elegans

&lt;400&gt; 13

Met Ile Thr Asp Lys Asn Leu Phe Ser Arg Leu Leu Ile Lys Lys Asn

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1				5					10				15		
Pro	Ile	Arg	Met	His	Ser	Pro	Ser	Phe	Ser	Phe	Ser	Leu	Ile	Thr	Ser
			20					25					30		
Leu	Phe	Phe	Thr	Gln	Phe	Phe	Met	Phe	Gln	Leu	Ser	Ser	Met	Ala	Tyr
		35					40					45			
Phe	Phe	Leu	Thr	Leu	Ile	Ala	Gly	Val	Thr	His	Phe	Tyr	Phe	Pro	Glu
	50					55					60				
Lys	Leu	Leu	Gly	Lys	Ser	Glu	Asn	Leu	Asp	His	Arg	Tyr	Gln	Ser	Ser
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Glu	Gln	Lys	Val	Leu	Ile	Glu	Trp	Thr	Glu	Asn	Lys	Ala	Val	Ala	Glu
				85					90					95	
Ser	Leu	Arg	Ala	Asn	Ser	Val	Thr	Val	Glu	Glu	Asn	Glu	Ser	Glu	Arg
			100					105					110		
Glu	Thr	Glu	Thr	Gln	Thr	Lys	Arg	Arg	Arg	Lys	Lys	Gln	Arg	Ser	Thr
		115					120					125			
Ser	Ser	Asp	Lys	Ala	Pro	Leu	Asn	Ser	Ala	Pro	Arg	His	Val	Gln	Lys
	130					135					140				
Phe	Asp	Trp	Lys	Asp	Met	Leu	His	Leu	Ala	Asp	Ile	Ser	Gly	Arg	Lys
145					150					155					160
Arg	Gly	Asn	Ser	Thr	Thr	Ser	His	Ser	Gly	His	Ala	Thr	Arg	Ala	Gly
				165					170					175	
Ser	Leu	Lys	Gly	Lys	Asn	Trp	Ile	Glu	Cys	Arg	Leu	Lys	Met	Arg	Gln
			180					185					190		
Cys	Ser	Tyr	Phe	Val	Pro	Ser	Gln	Arg	Phe	Ser	Glu	Arg	Cys	Gly	Cys
	195						200					205			
Gly	Lys	Glu	Arg	Ser	Lys	His	Thr	Glu	Glu	Val	Leu	Glu	Arg	Ser	Gln
	210					215					220				
Asn	Lys	Asn	His	Pro	Leu	Asn	His	Leu	Thr	Leu	Pro	Gly	Ile	His	Glu
225					230					235					240
Val	Asp	Thr	Thr	Asp	Ala	Asp	Ala	Asp	Asp	Asn	Glu	Val	Asn	Leu	Thr
				245				250						255	
Pro	Gly	Arg	Trp	Ser	Ile	Gln	Ser	His	Thr	Glu	Ile	Val	Pro	Thr	Asp
			260					265					270		
Ala	Tyr	Gly	Asn	Ile	Val	Phe	Glu	Gly	Thr	Ala	His	His	Ala	Gln	Tyr
	275						280					285			
Ala	Arg	Ile	Ser	Phe	Asp	Ser	Asp	Pro	Arg	Asp	Ile	Val	His	Leu	Met
	290					295					300				
Met	Lys	Val	Trp	Lys	Leu	Lys	Pro	Pro	Lys	Leu	Ile	Ile	Thr	Ile	Asn
305					310					315					320
Gly	Gly	Leu	Thr	Lys	Phe	Asp	Leu	Gln	Pro	Lys	Leu	Ala	Arg	Thr	Phe
				325					330					335	
Arg	Lys	Gly	Ile	Met	Lys	Ile	Ala	Lys	Ser	Thr	Asp	Ala	Trp	Ile	Ile
			340					345					350		
Thr	Ser	Gly	Leu	Asp	Glu	Gly	Val	Val	Lys	His	Leu	Asp	Ser	Ala	Leu
		355					360					365			
His	Ala	Leu	Glu	Phe	Trp	Ser	Phe	Gly	Leu	Phe	Trp	Val	Ile	Gln	Leu
	370					375					380				
Asp	Val	Leu	Leu	Ala	His	Ser	Met	Phe	Ile	Pro	Arg	Gly	Ser	Leu	Phe
385					390					395					400
Asp	His	Gly	Asn	His	Thr	Ser	Lys	Asn	His	Val	Val	Ala	Ile	Gly	Ile
				405					410					415	
Ala	Ser	Trp	Gly	Met	Leu	Lys	Gln	Arg	Ser	Arg	Phe	Val	Gly	Lys	Asp
			420					425					430		
Ser	Thr	Val	Thr	Tyr	Ala	Thr	Asn	Val	Phe	Asn	Asn	Thr	Arg	Leu	Lys
		435					440					445			
Glu	Leu	Asn	Asp	Asn	His	Ser	Tyr	Phe	Leu	Phe	Ser	Asp	Asn	Gly	Thr
	450					455					460				
Val	Asn	Arg	Tyr	Gly	Ala	Glu	Ile	Ile	Met	Arg	Lys	Arg	Leu	Glu	Ala

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465					470					475				480
Tyr	Leu	Ala	Gln	Gly	Asp	Lys	Lys	Arg	Ser	Ala	Ile	Pro	Leu	Val Cys
				485					490					495
Val	Val	Leu	Glu	Gly	Gly	Ala	Phe	Thr	Ile	Lys	Met	Val	His	Asp Tyr
			500					505					510	
Val	Thr	Thr	Ile	Pro	Arg	Ile	Pro	Val	Ile	Val	Cys	Asp	Gly	Ser Gly
			515				520					525		
Arg	Ala	Ala	Asp	Ile	Leu	Ala	Phe	Ala	His	Gln	Ala	Val	Ser	Gln Asn
			530			535					540			
Gly	Phe	Leu	Ser	Asp	Asn	Ile	Arg	Asn	Gln	Leu	Val	Asn	Ile	Val Arg
545					550					555				560
Arg	Ile	Phe	Gly	Tyr	Asp	Pro	Lys	Thr	Ala	Gln	Lys	Leu	Ile	Lys Gln
				565					570					575
Ile	Val	Glu	Cys	Ser	Thr	Asn	Lys	Ser	Leu	Met	Thr	Ile	Phe	Arg Leu
			580					585					590	
Gly	Glu	Ser	Ser	Arg	Glu	Asp	Leu	Asp	His	Val	Ile	Met	Ser	Cys Leu
			595			600						605		
Leu	Lys	Gly	Gln	Asn	Leu	Ser	Pro	Pro	Glu	Gln	Leu	Gln	Leu	Ala Leu
			610			615						620		
Ala	Trp	Asn	Arg	Ala	Asp	Ile	Ala	Arg	Thr	Glu	Ile	Phe	Ala	Asn Gly
625					630					635				640
Thr	Glu	Trp	Thr	Thr	Gln	Asp	Leu	His	Asn	Ala	Met	Ile	Glu	Ala Leu
				645					650				655	
Ser	Asn	Asp	Arg	Ile	Asp	Phe	Val	His	Leu	Leu	Leu	Glu	Asn	Gly Val
			660					665					670	
Ser	Met	Gln	Lys	Phe	Leu	Thr	Tyr	Gly	Arg	Leu	Glu	His	Leu	Tyr Asn
			675				680					685		
Thr	Asp	Lys	Gly	Pro	Gln	Asn	Thr	Leu	Arg	Thr	Asn	Leu	Leu	Val Asp
			690			695					700			
Ser	Lys	His	His	Ile	Lys	Leu	Val	Glu	Val	Gly	Arg	Leu	Val	Glu Asn
705					710					715				720
Leu	Met	Gly	Asn	Leu	Tyr	Lys	Ser	Asn	Tyr	Thr	Lys	Glu	Glu	Phe Lys
			725						730					735
Asn	Gln	Tyr	Phe	Leu	Phe	Asn	Asn	Arg	Lys	Gln	Phe	Gly	Lys	Arg Val
			740					745					750	
His	Ser	Asn	Ser	Asn	Gly	Gly	Arg	Asn	Asp	Val	Ile	Gly	Pro	Ser Gly
			755				760					765		
Asp	Ala	Gly	Arg	Glu	Arg	Met	Ser	Ser	Met	Gln	Ile	Ser	Leu	Ile Asn
			770			775					780			
Asn	Ala	Arg	Asn	Ser	Ile	Ile	Ser	Leu	Phe	Asn	Gly	Gly	Gly	Arg Lys
785					790					795				800
Arg	Glu	Ser	Asp	Asp	Glu	Asp	Asp	Phe	Ser	Asn	Leu	Glu	Glu	Glu Ala
				805					810					815
Asn	Met	Asp	Phe	Thr	Phe	Arg	Tyr	Pro	Tyr	Ser	Asp	Leu	Met	Ile Trp
			820					825					830	
Ala	Val	Leu	Thr	Lys	Arg	Gln	Lys	Met	Ala	Lys	Leu	Met	Trp	Thr His
			835				840					845		
Gly	Glu	Glu	Gly	Met	Ala	Lys	Ala	Leu	Val	Ala	Ser	Arg	Leu	Tyr Val
			850			855					860			
Ser	Leu	Ala	Lys	Thr	Ala	Ser	Leu	Ala	Thr	Gly	Glu	Ile	Gly	Met Ser
865					870					875				880
Gln	Asp	Phe	Thr	Glu	Phe	Ser	Asp	Glu	Phe	Ser	Glu	Leu	Ala	Val Glu
				885					890					895
Val	Leu	Glu	Tyr	Cys	Thr	Lys	His	Gly	Arg	Asp	Gln	Thr	Leu	Arg Leu
			900					905					910	
Leu	Thr	Cys	Glu	Leu	Ala	Asn	Trp	Gly	Asp	Glu	Thr	Cys	Leu	Ser Leu
			915				920					925		
Ala	Ala	Asn	Asn	Gly	His	Arg	Lys	Phe	Leu	Ala	His	Pro	Cys	Cys Gln
			930			935					940			

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Met	Leu	Leu	Ser	Asp	Leu	Trp	Gln	Gly	Gly	Leu	Leu	Met	Lys	Asn	Asn
945					950					955					960
Gln	Asn	Ser	Lys	Val	Leu	Thr	Cys	Leu	Ala	Ala	Pro	Pro	Leu	Ile	Phe
				965					970					975	
Leu	Leu	Gly	Phe	Lys	Thr	Lys	Glu	Gln	Leu	Met	Leu	Gln	Pro	Lys	Thr
			980					985					990		
Ala	Ala	Glu	His	Asp	Glu	Glu	Met	Ser	Asp	Ser	Glu	Met	Asn	Ser	Ala
		995					1000					1005			
Glu	Asp	Thr	Asp	Thr	Ser	Ser	Asp	Ser	Ser	Ser	Asp	Ser	Asp	Asp	
	1010					1015						1020			
Ser	Asp	Glu	Glu	Asp	Ala	Lys	Leu	Arg	Ala	Gln	Ser	Leu	Ser	Ala	
	1025					1030						1035			
Asp	Gln	Pro	Leu	Ser	Ile	His	Arg	Leu	Val	Arg	Asp	Lys	Leu	Asn	
	1040					1045						1050			
Phe	Ser	Glu	Lys	Lys	Lys	Pro	Asp	Met	Gly	Ile	Ser	Arg	Ile	Val	
	1055					1060						1065			
Val	Ala	Pro	Pro	Ile	Val	Thr	Gly	Arg	Asn	Arg	Ala	Arg	Thr	Met	
	1070					1075						1080			
Ser	Ile	Lys	Lys	Ser	Lys	Lys	Asn	Val	Ile	Lys	Pro	Pro	Ala	Cys	
	1085					1090						1095			
Leu	Lys	Ile	Glu	Thr	Ser	Asp	Asp	Asp	Glu	Gln	Glu	Gln	Lys	Lys	
	1100					1105						1110			
Ala	Thr	Glu	Met	Cys	Lys	Ser	Thr	Phe	Phe	Asp	Phe	Phe	Phe	Asp	
	1115					1120						1125			
Phe	Pro	Tyr	Ile	Asn	Arg	Thr	Gly	Lys	Arg	Gly	Ser	Val	Ala	Val	
	1130					1135						1140			
Ala	Met	Asn	His	Asp	Asp	Met	Tyr	Ile	Asp	Pro	Ser	Glu	Glu	Leu	
	1145					1150						1155			
Asp	Thr	Gln	Thr	Arg	Gln	Lys	Ser	Ser	Arg	Glu	Phe	Ser	Ser	Ser	
	1160					1165						1170			
Arg	Asn	Val	Thr	Val	Gln	Val	Tyr	Thr	Gln	Arg	Pro	Leu	Ser	Trp	
	1175					1180						1185			
Lys	Lys	Lys	Ile	Met	Glu	Phe	Tyr	Lys	Ala	Pro	Ile	Thr	Thr	Tyr	
	1190					1195						1200			
Trp	Leu	Trp	Phe	Phe	Ala	Phe	Ile	Trp	Phe	Leu	Ile	Leu	Leu	Thr	
	1205					1210						1215			
Tyr	Asn	Leu	Leu	Val	Lys	Thr	Gln	Arg	Ile	Ala	Ser	Trp	Ser	Glu	
	1220					1225						1230			
Trp	Tyr	Val	Phe	Ala	Tyr	Ile	Phe	Val	Trp	Thr	Leu	Glu	Ile	Gly	
	1235					1240						1245			
Arg	Lys	Val	Val	Ser	Thr	Ile	Met	Met	Asp	Thr	Ser	Lys	Pro	Val	
	1250					1255						1260			
Leu	Lys	Gln	Leu	Arg	Val	Phe	Phe	Phe	Gln	Tyr	Arg	Asn	Gly	Leu	
	1265					1270						1275			
Leu	Ala	Phe	Gly	Leu	Leu	Thr	Tyr	Leu	Ile	Ala	Tyr	Phe	Ile	Arg	
	1280					1285						1290			
Leu	Ser	Pro	Thr	Thr	Lys	Thr	Leu	Gly	Arg	Ile	Leu	Ile	Ile	Cys	
	1295					1300						1305			
Asn	Ser	Val	Ile	Trp	Ser	Leu	Lys	Leu	Val	Asp	Tyr	Leu	Ser	Val	
	1310					1315						1320			
Gln	Gln	Gly	Leu	Gly	Pro	Tyr	Ile	Asn	Ile	Val	Ala	Glu	Met	Ile	
	1325					1330						1335			
Pro	Thr	Met	Ile	Pro	Leu	Cys	Val	Leu	Val	Phe	Ile	Thr	Leu	Tyr	
	1340					1345						1350			
Ala	Phe	Gly	Leu	Leu	Arg	Gln	Ser	Ile	Thr	Tyr	Pro	Tyr	Glu	Asp	
	1355					1360						1365			
Trp	His	Trp	Ile	Leu	Val	Arg	Asn	Ile	Phe	Leu	Gln	Pro	Tyr	Phe	
	1370					1375						1380			

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Met	Leu	Tyr	Gly	Glu	Val	Tyr	Ala	Ala	Glu	Ile	Asp	Thr	Cys	Gly
	1385					1390					1395			
Asp	Glu	Ile	Trp	Gln	Thr	His	Glu	Asp	Glu	Asn	Ile	Pro	Ile	Ser
	1400					1405					1410			
Met	Leu	Asn	Val	Thr	His	Glu	Thr	Cys	Val	Pro	Gly	Tyr	Trp	Ile
	1415					1420					1425			
Ala	Pro	Val	Gly	Leu	Thr	Val	Phe	Met	Leu	Ala	Thr	Asn	Val	Leu
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Leu	Met	Asn	Val	Met	Val	Ala	Gly	Cys	Thr	Tyr	Ile	Phe	Glu	Lys
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His	Ile	Gln	Ser	Thr	Arg	Glu	Ile	Phe	Leu	Phe	Glu	Arg	Tyr	Gly
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Gln	Val	Met	Glu	Tyr	Glu	Ser	Thr	Pro	Trp	Leu	Pro	Pro	Pro	Phe
	1475					1480					1485			
Thr	Ile	Ile	Tyr	His	Val	Ile	Trp	Leu	Phe	Lys	Leu	Ile	Lys	Ser
	1490					1495					1500			
Ser	Ser	Arg	Met	Phe	Glu	Arg	Lys	Asn	Leu	Phe	Asp	Gln	Ser	Leu
	1505					1510					1515			
Lys	Leu	Phe	Leu	Ser	Pro	Asp	Glu	Met	Glu	Lys	Val	His	Thr	Phe
	1520					1525					1530			
Glu	Glu	Glu	Ser	Val	Glu	Asp	Met	Lys	Arg	Glu	Thr	Glu	Lys	Lys
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Asn	Leu	Ser	Ser	Asn	Asp	Glu	Arg	Ile	His	Arg	Thr	Ala	Glu	Arg
	1550					1555					1560			
Thr	Asp	Ala	Ile	Leu	Asn	Arg	Val	Ser	His	Leu	Thr	Gln	Leu	Glu
	1565					1570					1575			
Phe	Thr	Leu	Lys	Glu	Glu	Ile	Arg	Glu	Leu	Glu	His	Lys	Met	Lys
	1580					1585					1590			
Asn	Met	Asp	Ser	Arg	His	Lys	Glu	Gln	Met	Asn	Leu	Met	Leu	Asp
	1595					1600					1605			
Met	Asn	Lys	Lys	Leu	Gly	Lys	Phe	Ile	Ser	Gly	Lys	Tyr	Lys	Arg
	1610					1615					1620			
Gly	Ser	Phe	Gly	Gly	Ser	Gly	Ser	Asp	Gly	Gly	Gly	Gly	Ser	Ser
	1625					1630					1635			
Asp	Asn	Ser	Lys	Leu	Glu	Pro	Asn	Asn	Ser	Val	Pro	Met	Ile	Thr
	1640					1645					1650			
Val	Asp	Gly	Pro	Ser	Pro	Ile	Gly	Ser	Arg	Arg	Thr	Ser	Gly	Gln
	1655					1660					1665			
Tyr	Leu	Lys	Arg	Asp	Ser	Leu	Gln	Ala	Lys	Lys	Lys	Ile	Thr	Glu
	1670					1675					1680			
Asn	Arg	Arg	Ser	Ser	Leu	Glu	Gln	Pro	Lys	Ile	Pro	Ser	Ile	Gln
	1685					1690					1695			
Phe	Asn	Leu	Met	Glu	Asp	Gln	Asp	Glu	Ser	Ala	Ala	Glu	Ser	Ala
	1700					1705					1710			
Thr	Glu	Glu	Val	Ser	Ile	Ser	Ile	Pro	Val	Pro	Gln	Met	Arg	Val
	1715					1720					1725			
Arg	Gln	Val	Thr	Glu	Ser	Asp	Lys	Ser	Asp	Leu	Ser	Glu	Asp	Asp
	1730					1735					1740			
Leu	Ile	Thr	Arg	Glu	Asp	Ala	Pro	Pro	Thr	Ser	Ile	Asn	Leu	Pro
	1745					1750					1755			
Arg	Gly	Pro	Arg	Arg	His	Ala	Leu	Tyr	Ser	Thr	Ile	Ala	Asp	Ala
	1760					1765					1770			
Ile	Glu	Thr	Glu	Asp	Asp	Phe	Tyr	Ala	Asp	Ser	Pro	Val	Pro	Met
	1775					1780					1785			
Pro	Met	Thr	Pro	Val	Gln	Pro	Ala	Asp	Gly	Ser	Phe	Phe	Gly	Glu
	1790					1795					1800			
Asn	Asp	Ser	Arg	Tyr	Gln	Arg	Asp	Asp	Ser	Asp	Tyr	Glu		
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 <213> Caenorhabditis elegans

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 Ile Glu Asn Ile Arg His Arg Thr Ser Ser Phe Leu Arg Leu Leu Asn  
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 Ala Pro Arg Asn Ser Met Cys Asn Ala Asn Thr Val His Ser Ile Ser  
 35 40 45  
 Ser Phe Arg Ser Asp His Leu Ser Arg Lys Ser Thr His Lys Phe Leu  
 50 55 60  
 Asp Asn Pro Asn Leu Phe Ala Ile Glu Leu Thr Glu Lys Leu Ser Pro  
 65 70 75 80  
 Pro Trp Ile Glu Asn Thr Phe Glu Lys Arg Glu Cys Ile Arg Phe Ala  
 85 90 95  
 Ala Leu Pro Lys Asp Pro Glu Arg Cys Gly Cys Gly Arg Pro Leu Ser  
 100 105 110  
 Ala His Thr Pro Ala Ser Thr Phe Phe Ser Thr Leu Pro Val His Leu  
 115 120 125  
 Leu Glu Lys Glu Gln Gln Thr Trp Thr Ile Ala Asn Asn Thr Gln Thr  
 130 135 140  
 Ser Thr Thr Asp Ala Phe Gly Thr Ile Val Phe Gln Gly Gly Ala His  
 145 150 155 160  
 Ala His Lys Ala Gln Tyr Val Arg Leu Ser Tyr Asp Ser Glu Pro Leu  
 165 170 175  
 Asp Val Met Tyr Leu Met Glu Lys Val Trp Gly Leu Glu Ala Pro Arg  
 180 185 190  
 Leu Val Ile Thr Val His Gly Gly Met Ser Asn Phe Glu Leu Glu Glu  
 195 200 205  
 Arg Leu Gly Arg Leu Phe Arg Lys Gly Met Leu Lys Ala Ala Gln Thr  
 210 215 220  
 Thr Gly Ala Trp Ile Ile Thr Ser Gly Leu Asp Ser Gly Val Val Arg  
 225 230 235 240  
 His Val Ala Lys Ala Leu Asp Glu Ala Gly Ile Ser Ala Arg Met Arg  
 245 250 255  
 Ser Gln Ile Val Thr Ile Gly Ile Ala Pro Trp Gly Val Ile Lys Arg  
 260 265 270  
 Lys Glu Arg Leu Ile Arg Gln Asn Glu His Val Tyr Tyr Asp Val His  
 275 280 285  
 Ser Leu Ser Val Asn Ala Asn Val Gly Ile Leu Asn Asp Arg His Ser  
 290 295 300  
 Tyr Phe Leu Leu Ala Asp Asn Gly Thr Val Gly Arg Phe Gly Ala Asp  
 305 310 315 320  
 Leu His Leu Arg Gln Asn Leu Glu Asn His Ile Ala Thr Phe Gly Cys  
 325 330 335  
 Asn Gly Arg Lys Val Pro Val Val Cys Thr Leu Leu Glu Gly Gly Ile  
 340 345 350  
 Ser Ser Ile Asn Ala Ile His Asp Tyr Val Thr Met Lys Pro Asp Ile  
 355 360 365  
 Pro Ala Ile Val Cys Asp Gly Ser Gly Arg Ala Ala Asp Ile Ile Ser  
 370 375 380  
 Phe Ala Ala Arg Tyr Ile Asn Ser Asp Gly Thr Phe Ala Ala Glu Val  
 385 390 395 400  
 Gly Glu Lys Leu Arg Asn Leu Ile Lys Met Val Phe Pro Glu Thr Asp  
 405 410 415  
 Gln Glu Glu Met Phe Arg Lys Ile Thr Glu Cys Val Ile Arg Asp Asp

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			420				425				430				
Leu	Leu	Arg	Ile	Phe	Arg	Tyr	Gly	Gln	Glu	Glu	Glu	Glu	Asp	Val	Asp
		435					440				445				
Phe	Val	Ile	Leu	Ser	Thr	Val	Leu	Gln	Lys	Gln	Asn	Leu	Pro	Pro	Asp
	450					455					460				
Glu	Gln	Leu	Ala	Leu	Thr	Leu	Ser	Trp	Asn	Arg	Val	Asp	Leu	Ala	Lys
465					470					475					480
Ser	Cys	Leu	Phe	Ser	Asn	Gly	Arg	Lys	Trp	Ser	Ser	Asp	Val	Leu	Glu
				485					490					495	
Lys	Ala	Met	Asn	Asp	Ala	Leu	Tyr	Trp	Asp	Arg	Val	Asp	Phe	Val	Glu
			500					505					510		
Cys	Leu	Leu	Glu	Asn	Gly	Val	Ser	Met	Lys	Asn	Phe	Leu	Ser	Ile	Asn
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Arg	Leu	Glu	Asn	Leu	Tyr	Asn	Met	Asp	Asp	Ile	Asn	Ser	Ala	His	Ser
	530					535					540				
Val	Arg	Asn	Trp	Met	Glu	Asn	Phe	Asp	Ser	Met	Asp	Pro	His	Thr	Tyr
545					550					555					560
Leu	Thr	Ile	Pro	Met	Ile	Gly	Gln	Val	Val	Glu	Lys	Leu	Met	Gly	Asn
				565				570						575	
Ala	Phe	Gln	Leu	Tyr	Tyr	Thr	Ser	Arg	Ser	Phe	Lys	Gly	Lys	Tyr	Asp
			580					585					590		
Arg	Tyr	Lys	Arg	Ile	Asn	Gln	Ser	Ser	Tyr	Phe	His	Arg	Lys	Arg	Lys
		595					600					605			
Ile	Val	Gln	Lys	Glu	Leu	Phe	Lys	Lys	Lys	Ser	Asp	Asp	Gln	Ile	Asn
	610					615					620				
Asp	Asn	Glu	Glu	Glu	Asp	Phe	Ser	Phe	Ala	Tyr	Pro	Phe	Asn	Asp	Leu
625					630					635					640
Leu	Ile	Trp	Ala	Val	Leu	Thr	Ser	Arg	His	Gly	Met	Ala	Glu	Cys	Met
				645					650					655	
Trp	Val	His	Gly	Glu	Asp	Ala	Met	Ala	Lys	Cys	Leu	Leu	Ala	Ile	Arg
			660					665					670		
Leu	Tyr	Lys	Ala	Thr	Ala	Lys	Ile	Ala	Glu	Asp	Glu	Tyr	Leu	Asp	Val
		675					680					685			
Glu	Glu	Ala	Lys	Arg	Leu	Phe	Asp	Asn	Ala	Val	Lys	Cys	Arg	Glu	Asp
	690					695					700				
Ala	Ile	Glu	Leu	Leu	Asp	Gln	Cys	Tyr	Arg	Ala	Asp	His	Asp	Arg	Thr
705					710					715					720
Leu	Arg	Leu	Leu	Arg	Met	Glu	Leu	Pro	His	Trp	Gly	Asn	Asn	Asn	Cys
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Leu	Ser	Leu	Ala	Val	Leu	Ala	Asn	Thr	Lys	Thr	Phe	Leu	Ala	His	Pro
			740					745					750		
Cys	Cys	Gln	Ile	Leu	Leu	Ala	Glu	Leu	Trp	His	Gly	Ser	Leu	Lys	Val
		755					760					765			
Arg	Ser	Gly	Ser	Asn	Val	Arg	Val	Leu	Thr	Ala	Leu	Ile	Cys	Pro	Pro
	770														



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Trp Cys Ile Ala Phe Leu Ile Phe Leu Thr Thr Gln Thr Cys Ile Leu  
 900 905 910  
 Leu Leu Glu Thr Ser Leu Lys Pro Ser Lys Tyr Glu Trp Ile Thr Phe  
 915 920 925  
 Ile Tyr Thr Val Thr Leu Ser Val Glu His Ile Arg Lys Leu Met Thr  
 930 935 940  
 Ser Glu Gly Ser Arg Ile Asn Glu Lys Val Lys Val Phe Tyr Ala Lys  
 945 950 955 960  
 Trp Tyr Asn Ile Trp Thr Ser Ala Ala Leu Leu Phe Phe Leu Val Gly  
 965 970 975  
 Tyr Gly Phe Arg Leu Val Pro Met Tyr Arg His Ser Trp Gly Arg Val  
 980 985 990  
 Leu Leu Ser Phe Ser Asn Val Leu Phe Tyr Met Lys Ile Phe Glu Tyr  
 995 1000 1005  
 Leu Ser Val His Pro Leu Leu Gly Pro Tyr Ile Gln Met Ala Ala  
 1010 1015 1020  
 Lys Met Val Trp Ser Met Cys Tyr Ile Cys Val Leu Leu Leu Val  
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 Pro Leu Met Ala Phe Gly Val Asn Arg Gln Ala Leu Thr Glu Pro  
 1040 1045 1050  
 Asn Val Lys Asp Trp His Trp Leu Leu Val Arg Asn Ile Phe Tyr  
 1055 1060 1065  
 Lys Pro Tyr Phe Met Leu Tyr Gly Glu Val Tyr Ala Gly Glu Ile  
 1070 1075 1080  
 Asp Thr Cys Gly Asp Glu Gly Ile Arg Cys Phe Pro Gly Tyr Phe  
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 Ile Pro Pro Leu Leu Met Val Ile Phe Leu Leu Val Ala Asn Ile  
 1100 1105 1110  
 Leu Leu Leu Asn Leu Leu Ile Ala Ile Phe Asn Asn Ile Tyr Asn  
 1115 1120 1125  
 Asp Ser Ile Glu Lys Ser Lys Glu Ile Trp Leu Phe Gln Arg Tyr  
 1130 1135 1140  
 Gln Gln Leu Met Glu Tyr His Asp Ser Pro Phe Leu Pro Pro Pro  
 1145 1150 1155  
 Phe Ser Ile Phe Ala His Val Tyr His Phe Ile Asp Tyr Leu Tyr  
 1160 1165 1170  
 Asn Leu Arg Arg Pro Asp Thr Lys Arg Phe Arg Ser Glu His Ser  
 1175 1180 1185  
 Ile Lys Leu Ser Val Thr Glu Asp Glu Met Lys Arg Ile Gln Asp  
 1190 1195 1200  
 Phe Glu Glu Asp Cys Ile Asp Thr Leu Thr Arg Ile Arg Lys Leu  
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 Lys Leu Asn Thr Lys Glu Pro Leu Ser Val Thr Asp Leu Thr Glu  
 1220 1225 1230  
 Leu Thr Cys Gln Arg Val His Asp Leu Met Gln Glu Asn Phe Leu  
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 Leu Lys Ser Arg Val Tyr Asp Ile Glu Thr Lys Ile Asp His Ile  
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 Ser Asn Ser Ser Asp Glu Val Val Gln Ile Leu Lys Asn Lys Lys  
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 Leu Ser Gln Asn Phe Ala Ala Ser Ser Leu Ser Leu Pro Asp Thr  
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 Ser Ile Glu Val Pro Lys Ile Thr Lys Thr Leu Ile Asp Cys His  
 1295 1300 1305  
 Leu Ser Pro Val Ser Ile Glu Asp Arg Leu Ala Thr Arg Ser Pro  
 1310 1315 1320  
 Leu Leu Ala Asn Leu Gln Arg Asp His Thr Leu Arg Lys Leu Pro  
 1325 1330 1335  
 Thr Trp Glu Thr Ser Thr Ala Ser Thr Ser Ser Phe Glu Phe Val

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1340		1345		1350
Phe Tyr Phe Thr Arg His	Glu Gly Asn Glu Asn Lys Tyr Glu Phe			
1355		1360		1365
Lys Lys Leu Glu Lys Gly	Gly Phe Trp Arg Asn Asn Tyr Val Ile			
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Ser Trp Arg Leu				
1385				

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35 40 45	
Ala Gly Gly Asp Gly Asn Ala Val Pro Thr Thr Ser Gln Ala Gln Ala	
50 55 60	
Gln Thr Phe Asn Ser Gly Arg Gln Thr Thr Gly Met Ser Ser Gly Asp	
65 70 75 80	
Arg Leu Asn Glu Asp Val Ser Ala Thr Ala Asn Ser Ala Gln Leu Val	
85 90 95	
Leu Pro Thr Pro Leu Phe Asn Gln Met Arg Phe Thr Glu Ser Asn Met	
100 105 110	
Ser Leu Asn Arg His Asn Trp Val Arg Glu Thr Phe Thr Arg Arg Glu	
115 120 125	
Cys Ser Arg Phe Ile Ala Ser Ser Arg Asp Leu His Lys Cys Gly Cys	
130 135 140	
Gly Arg Thr Arg Asp Ala His Arg Asn Ile Pro Glu Leu Thr Ser Glu	
145 150 155 160	
Phe Leu Arg Gln Lys Arg Ser Val Ala Ala Leu Glu Gln Gln Arg Ser	
165 170 175	
Ile Ser Asn Val Asn Asp Asp Ile Asn Thr Gln Asn Met Tyr Thr Lys	
180 185 190	
Arg Gly Ala Asn Glu Lys Trp Ser Leu Arg Lys His Thr Val Ser Leu	
195 200 205	
Ala Thr Asn Ala Phe Gly Gln Val Glu Phe Gln Gly Gly Pro His Pro	
210 215 220	
Tyr Lys Ala Gln Tyr Val Arg Val Asn Phe Asp Thr Glu Pro Ala Tyr	
225 230 235 240	
Ile Met Ser Leu Phe Glu His Val Trp Gln Ile Ser Pro Pro Arg Leu	
245 250 255	
Ile Ile Thr Val His Gly Gly Thr Ser Asn Phe Asp Leu Gln Pro Lys	
260 265 270	
Leu Ala Arg Val Phe Arg Lys Gly Leu Leu Lys Ala Ala Ser Thr Thr	
275 280 285	
Gly Ala Trp Ile Ile Thr Ser Gly Cys Asp Thr Gly Val Val Lys His	
290 295 300	
Val Ala Ala Ala Leu Glu Gly Ala Gln Ser Ala Gln Arg Asn Lys Ile	
305 310 315 320	
Val Cys Ile Gly Ile Ala Pro Trp Gly Leu Leu Lys Lys Arg Glu Asp	
325 330 335	
Phe Ile Gly Gln Asp Lys Thr Val Pro Tyr Tyr Pro Ser Ser Ser Lys	
340 345 350	
Gly Arg Phe Thr Gly Leu Asn Asn Arg His Ser Tyr Phe Leu Leu Val	

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		355					360					365				
Asp	Asn	Gly	Thr	Val	Gly	Arg	Tyr	Gly	Ala	Glu	Val	Ile	Leu	Arg	Lys	
	370					375					380					
Arg	Leu	Glu	Met	Tyr	Ile	Ser	Gln	Lys	Gln	Lys	Ile	Phe	Gly	Gly	Thr	
385					390					395					400	
Arg	Ser	Val	Pro	Val	Val	Cys	Val	Val	Leu	Glu	Gly	Gly	Ser	Cys	Thr	
				405					410					415		
Ile	Arg	Ser	Val	Leu	Asp	Tyr	Val	Thr	Asn	Val	Pro	Arg	Val	Pro	Val	
			420					425					430			
Val	Val	Cys	Asp	Gly	Ser	Gly	Arg	Ala	Ala	Asp	Leu	Leu	Ala	Phe	Ala	
		435					440					445				
His	Gln	Asn	Val	Thr	Glu	Asp	Gly	Leu	Leu	Pro	Asp	Asp	Ile	Arg	Arg	
	450					455					460					
Gln	Val	Leu	Leu	Leu	Val	Glu	Thr	Thr	Phe	Gly	Cys	Ser	Glu	Ala	Ala	
465					470					475					480	
Ala	His	Arg	Leu	Leu	His	Glu	Leu	Thr	Val	Cys	Ala	Gln	His	Lys	Asn	
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Leu	Leu	Thr	Ile	Phe	Arg	Leu	Gly	Glu	Gln	Gly	Glu	His	Asp	Val	Asp	
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His	Ala	Ile	Leu	Thr	Ala	Leu	Leu	Lys	Gly	Gln	Asn	Leu	Ser	Ala	Ala	
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Asp	Gln	Leu	Ala	Leu	Ala	Leu	Ala	Trp	Asn	Arg	Val	Asp	Ile	Ala	Arg	
	530					535					540					
Ser	Asp	Val	Phe	Ala	Met	Gly	His	Glu	Trp	Pro	Gln	Ala	Ala	Leu	His	
545					550					555					560	
Asn	Ala	Met	Met	Glu	Ala	Leu	Ile	His	Asp	Arg	Val	Asp	Phe	Val	Arg	
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Leu	Leu	Leu	Glu	Gln	Gly	Ile	Asn	Met	Gln	Lys	Phe	Leu	Thr	Ile	Ser	
			580					585					590			
Arg	Leu	Asp	Glu	Leu	Tyr	Asn	Thr	Asp	Lys	Gly	Pro	Pro	Asn	Thr	Leu	
		595					600					605				
Phe	Tyr	Ile	Val	Arg	Asp	Val	Val	Arg	Val	Arg	Gln	Gly	Tyr	Arg	Phe	
	610					615					620					
Lys	Leu	Pro	Asp	Ile	Gly	Leu	Val	Ile	Glu	Lys	Leu	Met	Gly	Asn	Ser	
625					630					635					640	
Tyr	Gln	Cys	Ser	Tyr	Thr	Thr	Ser	Glu	Phe	Arg	Asp	Lys	Tyr	Lys	Gln	
				645					650					655		
Arg	Met	Lys	Arg	Val	Lys	His	Ala	Gln	Lys	Lys	Ala	Met	Gly	Val	Phe	
			660					665					670			
Ser	Ser	Arg	Pro	Ser	Arg	Thr	Gly	Ser	Gly	Ile	Ala	Ser	Arg	Gln	Ser	
		675					680					685				
Thr	Glu	Gly	Met	Gly	Gly	Val	Gly	Gly	Gly	Ser	Ser	Val	Ala	Gly	Val	
		690				695					700					
Phe	Gly	Asn	Ser	Phe	Gly	Asn	Gln	Asp	Pro	Pro	Leu	Asp	Pro	His	Val	
705					710					71						

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820					825					830					
Ala	Glu	Asp	Tyr	Leu	Glu	Val	Glu	Ile	Cys	Glu	Glu	Leu	Lys	Lys	Tyr
		835					840					845			
Ala	Glu	Glu	Phe	Arg	Ile	Leu	Ser	Leu	Glu	Leu	Leu	Asp	His	Cys	Tyr
	850					855					860				
His	Val	Asp	Asp	Ala	Gln	Thr	Leu	Gln	Leu	Leu	Thr	Tyr	Glu	Leu	Ser
865					870					875					880
Asn	Trp	Ser	Asn	Glu	Thr	Cys	Leu	Ala	Leu	Ala	Val	Ile	Val	Asn	Asn
			885						890					895	
Lys	His	Phe	Leu	Ala	His	Pro	Cys	Cys	Gln	Ile	Leu	Leu	Ala	Asp	Leu
		900					905						910		
Trp	His	Gly	Gly	Leu	Arg	Met	Arg	Thr	His	Ser	Asn	Ile	Lys	Val	Val
	915						920					925			
Leu	Gly	Leu	Ile	Cys	Pro	Pro	Phe	Ile	Gln	Met	Leu	Glu	Phe	Lys	Thr
	930					935					940				
Arg	Glu	Glu	Leu	Leu	Asn	Gln	Pro	Gln	Thr	Ala	Ala	Glu	His	Gln	Asn
945					950					955					960
Asp	Met	Asn	Tyr	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
			965						970					975	
Ser	Ser	Ser	Ser	Ser	Asp	Ser	Ser	Ser	Phe	Glu	Asp	Asp	Asp	Asp	Glu
			980					985					990		
Asn	Asn	Ala	His	Asn	His	Asp	Gln	Lys	Arg	Thr	Arg	Lys	Thr	Ser	Gln
		995					1000					1005			
Gly	Ser	Ala	Gln	Ser	Leu	Asn	Ile	Thr	Ser	Leu	Phe	His	Ser	Arg	
	1010					1015					1020				
Arg	Arg	Lys	Ala	Lys	Lys	Asn	Glu	Lys	Cys	Asp	Arg	Glu	Thr	Asp	
	1025					1030					1035				
Ala	Ser	Ala	Cys	Glu	Ala	Gly	Asn	Arg	Gln	Ile	Gln	Asn	Gly	Gly	
	1040					1045					1050				
Leu	Thr	Ala	Glu	Tyr	Gly	Thr	Phe	Gly	Glu	Ser	Asn	Gly	Val	Ser	
	1055					1060					1065				
Pro	Pro	Pro	Pro	Tyr	Met	Arg	Ala	Asn	Ser	Arg	Ser	Arg	Tyr	Asn	
	1070					1075					1080				
Asn	Arg	Ser	Asp	Met	Ser	Lys	Thr	Ser	Ser	Val	Ile	Phe	Gly	Ser	
	1085					1090					1095				
Asp	Pro	Asn	Leu	Ser	Lys	Leu	Gln	Lys	Ser	Asn	Ile	Thr	Ser	Thr	
	1100					1105					1110				
Asp	Arg	Pro	Asn	Pro	Met	Glu	Gln	Phe	Gln	Gly	Thr	Arg	Lys	Ile	
	1115					1120					1125				
Lys	Met	Arg	Arg	Arg	Phe	Tyr	Glu	Phe	Tyr	Ser	Ala	Pro	Ile	Ser	
	1130					1135					1140				
Thr	Phe	Trp	Ser	Trp	Thr	Ile	Ser	Phe	Ile	Leu	Phe	Ile	Thr	Phe	
	1145					1150					1155				
Phe	Thr	Tyr	Thr	Leu	Leu	Val	Lys	Thr	Pro	Pro	Arg	Pro	Thr	Val	
	1160					1165					1170				
Ile	Glu	Tyr	Ile	Leu	Ile	Ala	Tyr	Val	Ala	Ala	Phe	Gly	Leu	Glu	
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Gln	Val	Arg	Lys	Ile	Ile	Met	Ser	Asp	Ala	Lys	Pro	Phe	Tyr	Glu	
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Lys	Ile	Arg	Thr	Tyr	Val	Cys	Ser	Phe	Trp	Asn	Cys	Val	Thr	Ile	
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Leu	Ala	Ile	Ile	Phe	Tyr	Ile	Val	Gly	Phe	Phe	Met	Arg	Cys	Phe	
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Gly	Ser	Val	Ala	Tyr	Gly	Arg	Val	Ile	Leu	Ala	Cys	Asp	Ser	Val	
	1235					1240					1245				
Leu	Trp	Thr	Met	Lys	Leu	Leu	Asp	Tyr	Met	Ser	Val	His	Pro	Lys	
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Leu	Gly	Pro	Tyr	Val	Thr	Met	Ala	Gly	Lys	Met	Ile	Gln	Asn	Met	
	1265					1270					1275				

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Ser	Tyr	Ile	Ile	Val	Met	Leu	Val	Val	Thr	Leu	Leu	Ser	Phe	Gly
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Leu	Ala	Arg	Gln	Ser	Ile	Thr	Tyr	Pro	Asp	Glu	Thr	Trp	His	Trp
1295						1300					1305			
Ile	Leu	Val	Arg	Asn	Ile	Phe	Leu	Lys	Pro	Tyr	Phe	Met	Leu	Tyr
1310						1315					1320			
Gly	Glu	Val	Tyr	Ala	Asp	Glu	Ile	Asp	Thr	Cys	Gly	Asp	Glu	Ala
1325						1330					1335			
Trp	Asp	Gln	His	Leu	Glu	Asn	Gly	Gly	Pro	Val	Ile	Leu	Gly	Asn
1340						1345					1350			
Gly	Thr	Thr	Gly	Leu	Ser	Cys	Val	Pro	Gly	Tyr	Trp	Ile	Pro	Pro
1355						1360					1365			
Leu	Leu	Met	Thr	Phe	Phe	Leu	Leu	Ile	Ala	Asn	Ile	Leu	Leu	Met
1370						1375					1380			
Ser	Met	Leu	Ile	Ala	Ile	Phe	Asn	His	Ile	Phe	Asp	Ala	Thr	Asp
1385						1390					1395			
Glu	Met	Ser	Gln	Gln	Ile	Trp	Leu	Phe	Gln	Arg	Tyr	Lys	Gln	Val
1400						1405					1410			
Met	Glu	Tyr	Glu	Ser	Thr	Pro	Phe	Leu	Pro	Pro	Pro	Leu	Thr	Pro
1415						1420					1425			
Leu	Tyr	His	Gly	Val	Leu	Ile	Leu	Gln	Phe	Val	Arg	Thr	Arg	Leu
1430						1435					1440			
Ser	Cys	Ser	Lys	Ser	Gln	Glu	Arg	Asn	Pro	Ile	Leu	Leu	Leu	Lys
1445						1450					1455			
Ile	Ala	Glu	Leu	Phe	Leu	Asp	Asn	Asp	Gln	Ile	Glu	Lys	Leu	His
1460						1465					1470			
Asp	Phe	Glu	Glu	Asp	Cys	Met	Glu	Asp	Leu	Ala	Arg	Gln	Lys	Leu
1475						1480					1485			
Asn	Glu	Lys	Asn	Thr	Ser	Asn	Glu	Gln	Arg	Ile	Leu	Arg	Ala	Asp
1490						1495					1500			
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1505						1510					1515			
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Arg	Ala	Leu	Leu	Asn	Gln	Asn	Asn	Ala	Pro	Thr	Ala	Ile	Gly	Arg
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Cys	Phe	Ser	Pro	Ser	Pro	Asp	Pro	Leu	Val	Glu	Thr	Ala	Asn	Gly
1565						1570					1575			
Thr	Pro	Gly	Pro	Leu	Leu	Leu	Lys	Leu	Pro	Gly	Thr	Asp	Pro	Ile
1580						1585					1590			
Leu	Glu	Glu	Lys	Asp	His	Asp	Ser	Gly	Glu	Asn	Ser	Asn	Ser	Leu
1595						1600					1605			
Pro	Pro	Gly	Arg	Ile	Arg	Arg	Asn	Arg	Thr	Ala	Thr	Ile	Cys	Gly
1610						1615					1620			
Gly	Tyr	Val	Ser	Glu	Glu	Arg	Asn	Met	Met	Leu	Leu	Ser	Pro	Lys
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Pro	Ser	Asp	Val	Ser	Gly	Ile	Pro	Gln	Gln	Arg	Leu	Met	Ser	Val
1640						1645					1650			
Thr	Ser	Met	Asp	Pro	Leu	Pro	Leu	Pro	Leu	Ala	Lys	Leu	Ser	Thr
1655						1660					1665			
Met	Ser	Ile	Arg	Arg	Arg	His	Glu	Glu	Tyr	Thr	Ser	Ile	Thr	Asp
1670						1675					1680			
Ser	Ile	Ala	Ile	Arg	His	Pro	Glu	Arg	Arg	Ile	Arg	Asn	Asn	Arg
1685						1690					1695			
Ser	Asn	Ser	Ser	Glu	His	Asp	Glu	Ser	Ala	Val	Asp	Ser	Glu	Gly
1700						1705					1710			
Gly	Gly	Asn	Val	Thr	Ser	Ser	Pro	Arg	Lys	Arg	Ser	Thr	Arg	Asp

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1715	1720	1725
Leu Arg Met Thr Pro Ser Ser	Gln Val Glu Glu Ser	Thr Ser Arg
1730	1735	1740
Asp Gln Ile Phe Glu Ile Asp	His Pro Glu His Glu	Glu Asp Glu
1745	1750	1755
Ala Gln Ala Asp Cys Glu Leu	Thr Asp Val Ile Thr	Glu Glu Glu
1760	1765	1770
Asp Glu Glu Glu Asp Asp Glu	Glu Asp Asp Ser His	Glu Arg His
1775	1780	1785
His Ile His Pro Arg Arg Lys	Ser Ser Arg Gln Asn	Arg Gln Pro
1790	1795	1800
Ser His Thr Leu Glu Thr Asp	Leu Ser Glu Gly Glu	Glu Val Asp
1805	1810	1815
Pro Leu Asp Val Leu Lys Met	Lys Glu Leu Pro Ile	Ile His Gln
1820	1825	1830
Ile Leu Asn Glu Glu Glu Gln	Ala Gly Ala Pro His	Ser Thr Pro
1835	1840	1845
Val Ile Ala Ser Pro Ser Ser	Ser Arg Ala Asp Leu	Thr Ser Gln
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Lys Cys Ser Asp Val		
1865		

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 ggctgcaggc cgcgagggtg gaggaggagc cgctgccctt ccggagtccg ccccgtaggg 180  
 agaatgtccc agaaatcctg gatagagagc actttgacca agagggagtg tgtatatatt 240  
 ataccaagct ccaaagaccc tcacagatgt cttccaggat gtcagatttg tcagcaactt 300  
 gtcagatgtt tctgtggtcg tttggtcaag caacatgcat gctttactgc aagtcttgcc 360  
 atgaaatact cagatgtgaa attgggtgaa cactttaacc aggcaataga agaatggtct 420  
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 Lys Gln His Ala Cys Phe Thr Ala Ser Leu Ala Met Lys Tyr Ser Asp  
 50 55 60  
 Val Lys Leu Gly Glu His Phe Asn Gln Ala Ile Glu Glu Trp Ser Val  
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 Phe Gln Gly Gly Ser His  
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<210> 18  
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cacctgggccc gcaactgtcct ctgcatcgac ttcattggtt tcacggtgcg gctgcttcac	240
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gacgtgttct tcttctctt cttcctcggc gtgtggctgg tagctatggg ttggggccacg	360
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 Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly Cys  
 35 40 45  
 Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys Ile  
 50 55 60  
 Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val Asn  
 65 70 75 80  
 Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp  
 85 90 95  
 Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Met Gly  
 100 105 110  
 Trp Ala Thr Glu Gly Phe Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser  
 115 120 125  
 Ile Leu Xaa  
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&lt;210&gt; 20

&lt;211&gt; 389

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 20

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tggatttact	gactgtcaca	gaacttccat	tcctgttcat	tcaaaacgag	aaaagatcag	300
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&lt;210&gt; 21

&lt;211&gt; 415

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

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gagttctaaa	ttgccattgt	gaggatcatct	tcggttaggc	tttaatttgt	tgcaaagtgt	240
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&lt;210&gt; 22

&lt;211&gt; 405

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 22

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caaaactttt	cttaacagaa	gaagatcaaa	agaaactcca	tgattttgaa	gagcagtggtg	180



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	300
	360

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<213> Homo sapiens

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35     40     45
Ala Val Glu Leu Leu Glu Gln Ser Phe Arg Gln Asp Glu Thr Met Ala
50     55     60
Met Lys Leu Leu Thr Tyr Glu Leu Lys Asn Trp Ser Asn Ser Thr Cys
65     70     75     80
Leu Lys Leu Ala Val Ser Ser Arg Leu Arg Pro Phe Val Ala His Thr
85     90     95
Cys Thr Gln Met Leu Leu Ser Asp Met Trp Met Gly Arg Leu Asn Met
100    105    110
Arg Lys Asn Ser Trp Tyr Lys Val Ile Leu Ser Ile Leu Val Pro Pro
115    120    125
Ala Ile Leu Leu Leu Glu Tyr Lys Thr Lys Ala Glu Met Ser His Ile
130    135    140
Pro Gln Ser Gln Asp Ala His Gln Met Thr Met Asp Asp Ser Glu Asn
145    150    155    160
Asn Phe Gln Asn Ile Thr Glu Glu Ile Pro Met Glu Val Phe Lys Glu
165    170    175
Val Arg Ile Leu Asp Ser Asn Glu Gly Lys Asn Glu Met Glu Ile Gln
180    185    190
Met Lys Ser Lys Lys Leu Pro Ile Thr Arg Lys Phe Tyr Ala Phe Tyr

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225					230						235				240
Pro	Ser	Val	Gln	Glu	Trp	Ile	Val	Ile	Ala	Tyr	Ile	Phe	Thr	Tyr	Ala
				245					250					255	
Ile	Glu	Lys	Val	Arg	Glu	Ile	Phe	Met	Ser	Glu	Ala	Gly	Lys	Val	Asn
			260					265					270		
Gln	Lys	Ile	Lys	Val	Trp	Phe	Ser	Asp	Tyr	Phe	Asn	Ile	Ser	Asp	Thr
	275						280					285			
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Lys	Trp	Asn	Phe	Ala	Asn	Ala	Tyr	Asp	Asn	His	Val	Phe	Val	Ala	Gly
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Arg	Leu	Ile	Tyr	Cys	Leu	Asn	Ile	Ile	Phe	Trp	Tyr	Val	Arg	Leu	Leu
				325					330					335	
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			340					345					350		
Gly	Lys	Met	Val	Ala	Asn	Met	Phe	Tyr	Ile	Val	Val	Ile	Met	Ala	Leu
		355					360					365			
Val	Leu	Leu	Ser	Phe	Gly	Val	Pro	Arg	Lys	Ala	Ile	Leu	Tyr	Pro	His
	370					375					380				
Glu	Ala	Pro	Ser	Trp	Thr	Leu	Ala	Lys	Asp	Ile	Val	Phe	His	Pro	Tyr
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Trp	Met	Ile	Phe	Gly	Glu	Val	Tyr	Ala	Tyr	Glu	Ile	Asp	Val	Cys	Ala
				405					410					415	
Asn	Asp	Ser	Val	Ile	Pro	Gln	Ile	Cys	Gly	Pro	Gly	Thr	Trp	Leu	Thr
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Ile	Ser	Asn	Ile	Val	Trp	Lys	Tyr	Gln	Arg	Tyr	His	Phe	Ile	Met	Ala
465					470					475					480
Tyr	His	Glu	Lys	Pro	Val	Leu	Pro	Pro	Pro	Leu	Ile	Ile	Leu	Ser	His
				485					490					495	
Ile	Val	Ser	Leu	Phe	Cys	Cys	Ile	Cys	Lys	Arg	Arg	Lys	Lys	Asp	Lys
			500					505					510		
Thr	Ser	Asp	Gly	Pro	Lys	Leu	Phe	Leu	Thr	Glu	Glu	Asp	Gln	Lys	Lys
	515						520					525			
Leu	His	Asp	Phe	Glu	Glu	Gln	Cys	Val	Glu	Met	Tyr	Phe	Asn	Glu	Lys
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Asp	Asp	Lys	Phe	His	Ser	Gly	Ser	Glu	Glu	Arg	Ile	Arg	Val	Thr	Phe
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Glu	Arg	Val	Glu	Gln	Met	Cys	Ile	Gln	Ile	Lys	Glu	Val	Gly	Asp	Arg
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Val	Asn	Tyr	Ile	Lys	Arg	Ser	Leu	Gln	Ser	Leu	Asp	Ser	Gln	Ile	Gly
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His	Leu	Gln	Asp	Leu	Ser	Ala	Leu	Thr	Val	Asp	Thr	Leu	Lys	Thr	Leu
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Gly	Pro	Val	Arg	Pro	Ser	Val	Trp	Lys	Lys	His	Gly	Val	Val	Asn	Thr
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Leu	Ser	Ser	Ser	Leu	Pro	Gln	Gly	Asp	Leu	Glu	Ser	Asn	Asn	Pro	Phe
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				805					810					815	
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Cys Cys Arg Lys Leu Lys Leu Pro Asp Leu Lys Arg Asn Asp Tyr		
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Thr Pro Asp Lys Ile Ile Phe Pro Gln Asp Glu Pro Ser Asp Leu		
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			180					185					190	Ile

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Gly	Glu	Val	Val	Arg	Asp	Asn	Thr	Ile	Ser	Arg	Ser	Ser	Glu	Glu	Asn
		195					200					205			
Ile	Val	Ala	Ile	Gly	Ile	Ala	Ala	Trp	Gly	Met	Val	Ser	Asn	Arg	Asp
		210					215					220			
Thr	Leu	Ile	Arg	Asn	Cys	Asp	Ala	Glu	Gly	Tyr	Phe	Leu	Ala	Gln	Tyr
225					230					235					240
Leu	Met	Asp	Asp	Phe	Thr	Arg	Asp	Pro	Leu	Cys	Ile	Leu	Asp	Asn	Asn
				245						250				255	
His	Thr	His	Leu	Leu	Leu	Val	Asp	Asn	Gly	Cys	His	Gly	His	Pro	Thr
			260					265					270		
Val	Glu	Ala	Lys	Leu	Arg	Asn	Gln	Leu	Glu	Lys	Tyr	Ile	Ser	Glu	Arg
		275					280					285			
Thr	Ile	Gln	Asp	Ser	Asn	Tyr	Gly	Gly	Lys	Ile	Pro	Ile	Val	Cys	Phe
		290				295					300				
Ala	Gln	Gly	Gly	Gly	Lys	Glu	Thr	Leu	Lys	Ala	Ile	Asn	Thr	Ser	Ile
305					310					315					320
Lys	Asn	Lys	Ile	Pro	Cys	Val	Val	Val	Glu	Gly	Ser	Gly	Gln	Ile	Ala
				325						330				335	
Asp	Val	Ile	Ala	Ser	Leu	Val	Glu	Val	Glu	Asp	Ala	Leu	Thr	Ser	Ser
			340					345					350		
Ala	Val	Lys	Glu	Lys	Leu	Val	Arg	Phe	Leu	Pro	Arg	Thr	Val	Ser	Arg
		355					360					365			
Leu	Pro	Glu	Glu	Glu	Thr	Glu	Ser	Trp	Ile	Lys	Trp	Leu	Lys	Glu	Ile
		370				375					380				
Leu	Glu	Cys	Ser	His	Leu	Leu	Thr	Val	Ile	Lys	Met	Glu	Glu	Ala	Gly
385					390					395					400
Asp	Glu	Ile	Val	Ser	Asn	Ala	Ile	Ser	Tyr	Ala	Leu	Tyr	Lys	Ala	Phe
				405					410					415	
Ser	Thr	Ser	Glu	Gln	Asp	Lys	Asp	Asn	Trp	Asn	Gly	Gln	Leu	Lys	Leu
			420					425					430		
Leu	Leu	Glu	Trp	Asn	Gln	Leu	Asp	Leu	Ala	Asn	Asp	Glu	Ile	Phe	Thr
		435					440					445			
Asn	Asp	Arg	Arg	Trp	Glu	Ser	Ala	Asp	Leu	Gln	Glu	Val	Met	Phe	Thr
		450				455					460				
Ala	Leu	Ile	Lys	Asp	Arg	Pro	Lys	Phe	Val	Arg	Leu	Phe	Leu	Glu	Asn
465				470					475						480
Gly	Leu	Asn	Leu	Arg	Lys	Phe	Leu	Thr	His	Asp	Val	Leu	Thr	Glu	Leu
				485					490					495	
Phe	Ser	Asn	His	Phe	Ser	Thr	Leu	Val	Tyr	Arg	Asn	Leu	Gln	Ile	Ala
			500					505					510		
Lys	Asn	Ser	Tyr	Asn	Asp	Ala	Leu	Leu	Thr	Phe	Val	Trp	Lys	Leu	Val
		515					520					525			
Ala	Asn	Phe	Arg	Arg	Gly	Phe	Arg	Lys	Glu	Asp	Arg	Asn	Gly	Arg	Asp
		530				535					540				
Glu	Met	Asp	Ile	Glu	Leu	His	Asp	Val	Ser	Pro	Ile	Thr	Arg	His	Pro
545					550					555					560
Leu	Gln	Ala	Leu	Phe	Ile	Trp	Ala	Ile	Leu	Gln	Asn	Lys	Lys	Glu	Leu
				565					570					575	
Ser	Lys	Val	Ile	Trp	Glu	Gln	Thr	Arg	Gly	Cys	Thr	Leu	Ala	Ala	Leu
			580				585						590		
Gly	Ala	Ser	Lys	Leu	Leu	Lys	Thr	Leu	Ala	Lys	Val	Lys	Asn	Asp	Ile
		595					600					605			
Asn	Ala	Ala	Gly	Glu	Ser	Glu	Glu	Leu	Ala	Asn	Glu	Tyr	Glu	Thr	Arg
		610				615					620				
Ala	Val	Glu	Leu	Phe	Thr	Glu	Cys	Tyr	Ser	Ser	Asp	Glu	Asp	Leu	Ala
625					630					635					640
Glu	Gln	Leu	Leu	Val	Tyr	Ser	Cys	Glu	Ala	Trp	Gly	Gly	Ser	Asn	Cys
				645					650					655	
Leu	Glu	Leu	Ala	Val	Glu	Ala	Thr	Asp	Gln	His	Phe	Ile	Ala	Gln	Pro

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660 665 670  
 Gly Val Gln Asn Phe Leu Ser Lys Gln Trp Tyr Gly Glu Ile Ser Arg  
 675 680 685  
 Asp Thr Lys Asn Trp Lys Ile Leu Cys Leu Phe Ile Ile Pro Leu  
 690 695 700  
 Val Gly Cys Gly Phe Val Ser Phe Arg Lys Lys Pro Val Asp Lys His  
 705 710 715 720  
 Lys Lys Leu Leu Trp Tyr Tyr Val Ala Phe Phe Thr Ser Pro Phe Val  
 725 730 735  
 Val Phe Ser Trp Asn Val Val Phe Tyr Ile Ala Phe Leu Leu Leu Phe  
 740 745 750  
 Ala Tyr Val Leu Leu Met Asp Phe His Ser Val Pro His Pro Pro Glu  
 755 760 765  
 Leu Val Leu Tyr Ser Leu Val Phe Val Leu Phe Cys Asp Glu Val Arg  
 770 775 780  
 Gln Trp Tyr Val Asn Gly Val Asn Tyr Phe Thr Asp Leu Trp Asn Val  
 785 790 795 800  
 Met Asp Thr Leu Gly Leu Phe Tyr Phe Ile Ala Gly Ile Val Phe Arg  
 805 810 815  
 Leu His Ser Ser Asn Lys Ser Ser Leu Tyr Ser Gly Arg Val Ile Phe  
 820 825 830  
 Cys Leu Asp Tyr Ile Ile Phe Thr Leu Arg Leu Ile His Ile Phe Thr  
 835 840 845  
 Val Ser Arg Asn Leu Gly Pro Lys Ile Ile Met Leu Gln Arg Met Leu  
 850 855 860  
 Ile Asp Val Phe Phe Phe Leu Phe Leu Phe Ala Val Trp Met Val Ala  
 865 870 875 880  
 Phe Gly Val Ala Arg Gln Gly Ile Leu Arg Gln Asn Glu Gln Arg Trp  
 885 890 895  
 Arg Trp Ile Phe Arg Ser Val Ile Tyr Glu Pro Tyr Leu Ala Met Phe  
 900 905 910  
 Gly Gln Val Pro Ser Asp Val Asp Gly Thr Thr Tyr Asp Phe Ala His  
 915 920 925  
 Cys Thr Phe Thr Gly Asn Glu Ser Lys Pro Leu Cys Val Glu Leu Asp  
 930 935 940  
 Glu His Asn Leu Pro Arg Phe Pro Glu Trp Ile Thr Ile Pro Leu Val  
 945 950 955 960  
 Cys Ile Tyr Met Leu Ser Thr Asn Ile Leu Val Asn Leu Leu Val  
 965 970 975  
 Ala Met Phe Gly Tyr Thr Val Gly Thr Val Gln Glu Asn Asn Asp Gln  
 980 985 990  
 Val Trp Lys Phe Gln Arg Tyr Phe Leu Val Gln Glu Tyr Cys Ser Arg  
 995 1000 1005  
 Leu Asn Ile Pro Phe Pro Phe Ile Val Phe Ala Tyr Phe Tyr Met  
 1010 1015 1020  
 Val Val Lys Lys Cys Phe Lys Cys Cys Cys Lys Glu Lys Asn Met  
 1025 1030 1035  
 Glu Ser Ser Val Cys Cys Phe Lys Asn Glu Asp Asn Glu Thr Leu  
 1040 1045 1050  
 Ala Trp Glu Gly Val Met Lys Glu Asn Tyr Leu Val Lys Ile Asn  
 1055 1060 1065  
 Thr Lys Ala Asn Asp Thr Ser Glu Glu Met Arg His Arg Phe Arg  
 1070 1075 1080  
 Gln Leu Asp Thr Lys Leu Asn Asp Leu Lys Gly Leu Leu Lys Glu  
 1085 1090 1095  
 Ile Ala Asn Lys Ile Lys  
 1100